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EXAMINER

DEAN, RAYMOND S

ART UNIT PAPER NUMBER

2684

DATE MAILED: 12/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/825,831

Applicant(s)

RUSCHIN, SHIOMO

Examiner

Raymond S Dean

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 - 7, 9 - 13, and 15 is/are rejected.
- 7) ☒ Claim(s) 8 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Johansson (5,913,163).
3. Regarding Claim 1, Johansson teaches a cellular communications system for use by a user to communicate via a cellular communications network, the system comprising: (a) a cellular communications unit for two-way communication with the cellular communications network (Figure 3, Column 5 lines 36 – 38, Column 6 lines 25 – 31), (b) a headpiece including at least one earphone and a microphone (Figure 3, Column 6 lines 43 – 47), and a bi-directional optical communications link associated with said cellular communications unit and said headpiece and configured to provide a communications link between said cellular communications unit and said headpiece such that said earphone produces an audio output corresponding to data received by the cellular communications unit and said cellular communications unit transmits data

corresponding to an audio input received by said microphone (Figure 3, Column 11 lines 31 – 44, information is transmitted bi-directionally between headset 220 and cellular communications unit 240, said information can be transmitted via an IR link which is an optical link, it is well known in the art that the basic function of a headset that is used as a hands-free device with a cellular phone is to transduce the incoming electrical signal from the cellular phone to an audio signal such that the user can hear the information and to transduce the audio signal from the user to an electrical signal such that the cellular phone can properly receive and then transmit said information via the cellular network thus this function is inherent).

4. Regarding Claim 2, Johansson teaches all of the claimed limitations recited in Claim 1. Johansson further teaches a bi-directional optical communications link that is the sole communications link between said cellular communications unit and said headpiece (Figure 3, Column 5 lines 36 – 38, Column 6 lines 25 – 31, Column 6 line 43 – 47, Column 11 lines 31 – 44, information is transmitted bi-directionally between headset 220 and cellular communications unit 240).

5. Regarding Claim 7, Johansson teaches all of the claimed limitations recited in Claim 1. Johansson further teaches a headpiece that includes at least one battery (Figure 3, Column 6 lines 43 – 47, since the headset is portable it must rely on batteries to power it's circuits therefore an inherent battery is taught).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 5, 9, 10, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johansson (5,913,163) in view of Charlier et al. (US 6,577,877 B1).

Regarding Claim 3, Johansson teaches all of the claimed limitations recited in Claim 1. Johansson further teaches a bi-directional optical communications link between said cellular communications unit and said headpiece (Figure 3, Column 11 lines 31 – 44, information is transmitted bi-directionally between headset 220 and cellular communications unit 240).

Johansson does not specifically teach an optical communications link that includes at least one optic fiber deployed between said cellular communications unit and said headpiece.

Charlier teaches an optical communications link embodied in a fiber optic cable, which includes at least one optic fiber (Figure 5, Column 5 lines 31 – 43).

Johansson teaches a bi-directional optical link between the headset, which is a hands-free peripheral, and the cellular communications unit. Charlier also teaches a bi-directional optical link between a hands-free peripheral and a cellular communications unit (Column 2 lines 16 – 24). Since both Johansson and Charlier teach a hands-free peripheral that communicates with the cellular communications unit via a bi-directional

optical link it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference and use the fiber optic cable taught in Charlier as an alternative means for providing the bi-directional optical link between the headset and the cellular communications unit in Johansson such that the user could operate hands-free.

Regarding Claim 5, Johansson in view of Charlier teaches all of the claimed limitations recited in Claim 3. Charlier further teaches at least one optic fiber that is the sole optic fiber (Figure 5, Column 5 lines 31 – 43).

Regarding Claim 9, Johansson teaches a headset for use with a cellular communications unit for bi-directional communication with a cellular communications network, the cellular communications unit having an electrical output for providing an audio-out signal corresponding to data received from the cellular communications network and an electrical input for receiving an audio-in signal for transmission via the cellular network (Figure 3, Column 5 lines 36 – 38, Column 6 lines 25 – 31 Column 6 lines 43 – 47, Column 11 lines 31 – 44, information is transmitted bi-directionally between headset 220 and cellular communications unit 240, said information can be transmitted via an IR link which is an optical link, it is well known in the art that the basic function of a headset that is used as a hands-free device with a cellular phone is to transduce the incoming electrical signal from the cellular phone to an audio signal such that the user can hear the information and to transduce the audio signal from the user to an electrical signal such that the cellular phone can properly receive and then transmit said information via the cellular network thus this function is inherent). Johansson

teaches at least one earphone that is electrically connected so as to be driven by a electrical driver signal to generate an audible sound and a microphone that generates an electrical microphone signal corresponding to sensed audible sounds (Figure 3, Column 6 lines 43 – 47, it is well known in the art that the basic function of a headset that is used as a hands-free device with a cellular phone is to transduce the incoming electrical signal from the cellular phone to an audio signal such that the user can hear the information and to transduce the audio signal from the user to an electrical signal such that the cellular phone can properly receive and then transmit said information via the cellular network thus this function is inherent).

Johansson does not specifically teach an electro-optic interface unit for connection to the cellular communications unit, said interface unit including: an interface-unit optical modulator configured for receiving said audio-out signal from the cellular communications unit and generating a corresponding first optical signal and an interface-unit optical receiver responsive to a received optical signal to generate a corresponding electrical audio-in signal to be provided to the electrical input of the cellular communications unit. Johansson does not specifically teach a headpiece optical receiver responsive to a received optical signal to generate a corresponding electrical driver signal and a headpiece optical modulator responsive to said microphone signal to generate a corresponding second optical signal. Johansson does not specifically teach an optic fiber connection including at least one optic fiber, said optic fiber connection being associated with said electro-optic interface unit and said headpiece and being configured to form an optical link between said interface-unit

optical modulator and said headpiece optical receiver, and between said headpiece optical modulator and said interface-unit optical receiver.

Charlier teaches an electro-optic interface unit for connection to the cellular communications unit, said interface unit including: an interface-unit optical modulator configured for receiving said audio-out signal from the cellular communications unit and generating a corresponding first optical signal and an interface-unit optical receiver responsive to a received optical signal to generate a corresponding electrical audio-in signal to be provided to the electrical input of the cellular communications unit (Column 2 lines 16 – 24, Column 3 lines 17 – 52). Charlier teaches a peripheral optical receiver responsive to a received optical signal to generate a corresponding electrical driver signal and a peripheral optical modulator responsive to an electrical signal to generate a corresponding second optical signal (Column 2 lines 16 – 24, Column 3 lines 17 – 52). Charlier teaches an optic fiber connection including at least one optic fiber, said optic fiber connection being associated with said electro-optic interface unit and a peripheral and being configured to form an optical link between said interface-unit optical modulator and a peripheral optical receiver, and between a peripheral optical modulator and said interface-unit optical receiver (Figure 5, Column 5 lines 31 – 43, Column 3 lines 17 – 52).

Johansson teaches a bi-directional optical link between the headset, which is a hands-free peripheral, and the cellular communications unit. Charlier also teaches a bi-directional optical link between a hands-free peripheral and a cellular communications unit (Column 2 lines 16 – 24). Since both Johansson and Charlier teach a hands-free

peripheral that communicates with the cellular communications unit via a bi-directional optical link it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference and use the fiber optic cable taught in Charlier as an alternative means for providing the bi-directional optical link between the headset and the cellular communications unit in Johansson such that the user could operate hands-free. Since Johansson teaches modifying the circuitry of the cellular phone and headset such that they can communicate via an optical link (Column 11 lines 31 – 44) it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the electro-optic interface, the optical receiver, and optical modulator circuitry taught in Charlier in the communication system of Johansson to enable a bi-directional optical link.

Regarding Claim 10, Johansson in view of Charlier teaches all of the claimed limitations recited in Claim 9. Johansson teaches a headpiece (Figure 3, Column 6 lines 43 – 47).

Johansson does not specifically teach an optic fiber connection that employs a single optic fiber to provide an optical link both between a interface-unit optical modulator and a headpiece optical receiver, and between said headpiece optical modulator and said interface-unit optical receiver.

Charlier teaches an optic fiber connection that employs a single optic fiber to provide an optical link both between a interface-unit optical modulator and a peripheral optical receiver, and between said peripheral optical modulator and said interface-unit optical receiver (Figure 5, Column 5 lines 31 – 43, Column 3 lines 17 – 52).

Johansson teaches a bi-directional optical link between the headset, which is a hands-free peripheral, and the cellular communications unit. Charlier also teaches a bi-directional optical link between a hands-free peripheral and a cellular communications unit (Column 2 lines 16 – 24). Since both Johansson and Charlier teach a hands-free peripheral that communicates with the cellular communications unit via a bi-directional optical link it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference and use the fiber optic cable taught in Charlier as an alternative means for providing the bi-directional optical link between the headset and the cellular communications unit in Johansson such that the user could operate hands-free. Since Johansson teaches modifying the circuitry of the cellular phone and headset such that they can communicate via an optical link (Column 11 lines 31 – 44) it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the electro-optic interface, the optical receiver, and optical modulator circuitry taught in Charlier in the communication system of Johansson to enable the bi-directional optical link between the headset and the cellular communications unit.

Regarding Claim 13, Johansson in view of Charlier teaches all of the claimed limitations recited in Claim 9. Johansson teaches a headpiece that includes at least one battery (Figure 3, Column 6 lines 43 – 47, since the headset is portable it must rely on batteries to power its circuits therefore an inherent battery is taught).

Johansson does not specifically teach a headpiece optical receiver/optical modulator.

Charlier teaches a peripheral optical receiver/optical modulator (Column 2 lines 16 – 24, Column 3 lines 17 – 52).

Johansson teaches a bi-directional optical link between the headset, which is a hands-free peripheral, and the cellular communications unit. Charlier also teaches a bi-directional optical link between a hands-free peripheral and a cellular communications unit (Column 2 lines 16 – 24). Since both Johansson and Charlier teach a hands-free peripheral that communicates with the cellular communications unit via a bi-directional optical link and since Johansson teaches modifying the circuitry of the cellular phone and headset such that they can communicate via an optical link (Column 11 lines 31 – 44) it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the electro-optic interface, the optical receiver, and optical modulator circuitry taught in Charlier in the communication system of Johansson to enable the bi-directional optical link between the headset and the cellular communications unit.

Regarding Claim 15, Johansson teaches a headset (Figure 3, Column 6 lines 43 – 47)

Johansson does not specifically teach a headset that is substantially electrically insulated from said interface unit.

Charlier teaches a peripheral that is substantially electrically insulated from said interface unit (Column 3 lines 17 – 52, Column 5 lines 31 – 43, the electrical signals are converted to optical signals which can either travel in free space or via an optic fiber, this method of transmission substantially insulates the peripheral from electromagnetic radiation thus an inherent electrical insulation is taught).

Johansson teaches a bi-directional optical link between the headset, which is a hands-free peripheral, and the cellular communications unit. Charlier also teaches a bi-directional optical link between a hands-free peripheral and a cellular communications unit (Column 2 lines 16 – 24). Since Johansson teaches modifying the circuitry of the cellular phone and headset such that they can communicate via a optical link (Column 11 lines 31 – 44) it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the electro-optic interface, the optical receiver, and optical modulator circuitry taught in Charlier in the communication system of Johansson to enable the bi-directional optical link between the headset and the cellular communications unit.

8. Claims 4, 6, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johansson (5,913,163) in view of Charlier et al. (US 6,577,877 B1) and in further view of Lefevre et al. (5,821,530).

Regarding Claim 4, Johansson in view of Charlier teaches all of the claimed limitations recited in Claim 3. Johansson in view of Charlier does not teach at least one optic fiber that is implemented as two optic fibers.

Lefevre teaches an optic fiber that is implemented as two optic fibers (Column 2 lines 12 – 15, any number of optic fibers can be used)

Johansson in view of Charlier and Lefevre (Column 2 lines 41 – 43) teach the use of optic fibers for infrared transmissions. It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to make a design

preference and use the two optic fibers taught in Lefevre in place of the single optic fiber in Johansson in view of Charlier as an alternative means for providing a bi-directional optical link between the headset and cellular communications unit.

Regarding Claim 6, Johansson in view of Charlier teaches all of the claimed limitations recited in Claim 3. Johansson in view of Charlier does not teach at least one optic fiber that is implemented as at least one plastic optic fiber.

Lefevre teaches at least one optic fiber that is implemented as at least one plastic optic fiber (Column 2 lines 15 – 17).

Johansson in view of Charlier teaches a headset that is in close proximity to the cellular communications unit. It is well known in the art that plastic optic fibers are inexpensive and are ideal for short range links thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the plastic optic fiber taught in Lefevre in the communication system of Johansson in view of Charlier in order to provide a low cost design that would enable a reliable short range link between the headset and the cellular communications unit.

Regarding Claim 11, Johansson in view of Charlier teaches all of the claimed limitations recited in Claim 9. Johansson in view of Charlier, as demonstrated in Claim 10 above, teaches a single optic fiber to provide an optical link between an interface-unit optical modulator and headpiece optical receiver and between said headpiece optical modulator and said interface-unit optical receiver.

Johansson in view of Charlier does not specifically teach a first optic fiber to provide an optical link between said interface-unit optical modulator and said headpiece

optical receiver and a second optic fiber to provide said optical link between said headpiece optical modulator and said interface-unit optical receiver.

Lefevre teaches a first and second optic fiber (Column 2 lines 12 – 15, any number of optic fibers can be used).

Johansson in view of Charlier and Lefevre (Column 2 lines 41 – 43) teach the use of optic fibers for infrared transmissions. It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference and use the two optic fibers taught in Lefevre in place of the single optic fiber in Johansson in view of Charlier as an alternative means for providing a bi-directional optical link between the headset and cellular communications unit.

Regarding Claim 12, Johansson in view of Charlier teaches all of the claimed limitations recited in Claim 9. Johansson in view of Charlier does not teach at least one optic fiber that is implemented as at least one plastic optic fiber.

Lefevre teaches at least one optic fiber that is implemented as at least one plastic optic fiber (Column 2 lines 15 – 17).

Johansson in view of Charlier teaches a headset that is in close proximity to the cellular communications unit. It is well known in the art that plastic optic fibers are inexpensive and are ideal for short range links thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the plastic optic fiber taught in Lefevre in the communication system of Johansson in view of Charlier in order to provide a low cost design that would enable a reliable short range link between the headset and the cellular communications unit.

Allowable Subject Matter

9. Claims 8 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Johansson in view of Charlier teaches a headset, which is configured to communicate with a cellular communications unit via a bi-directional optical link, with an inherent battery for powering the circuitry in said headset. The prior art of record however fails to show a cellular communications system wherein a bi-directional optical communications link is configured to transfer power from said cellular communications unit to said headset for powering the circuitry in said headset.

Conclusion

10. Any inquiry concerning this communication should be directed to Raymond S. Dean at telephone number (703) 305-8998.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung, can be reached at (703) 308-7745. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

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Or faxed to:

(703) 872-9314 (for Technology center 2600 only)

Hand –delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

 